REMARKS

Claims 5 and 8 are pending in this application. By this Amendment, claims 5 and 8 are amended. Support for the amendments to the claims may be found in the specification at page 12, line 21 to page 13, line 4. No new matter is added.

In view of the foregoing amendments and following remarks, reconsideration and allowance are respectfully requested.

I. Interview

The courtesies extended to Applicants' representative by Examiners Kollias and Shosho at the interview held January 11, 2011, are appreciated. Reasons presented at the interview as warranting favorable action are incorporated into the remarks below, which constitute Applicants' record of the interview.

II. Rejection Under 35 U.S.C. §103

The Office Action rejects claims 5 and 8 under 35 U.S.C. §103(a) as having been obvious over U.S. Patent Application Publication No. 2003/0207979 to Sato et al. ("Sato") in view of U.S. Patent Application Publication No. 2002/0013393 to Lewin ("Lewin") and U.S. Patent Application Publication No. 2003/0207106 to Nakamura et al. ("Nakamura"). The rejection is respectfully traversed.

Claims 5 and 8 are each directed to a wiring harness comprising a wire bundle that comprises non-halogenous insulated wires. The non-halogenous insulated wires each comprise a conductor covered with a crosslinked flame-retardant resin composition. The crosslinked flame-retardant resin composition comprises: (1) a resin ingredient containing polyethylene of which a melt flow rate (MFR) is 5 g/10 min or less and a density is 0.90 g/cm^3 or more and a polymer selected from the recited Markush group; (2) a metallic hydrate that is at least one member selected from the group consisting of magnesium hydroxide, aluminum hydroxide, zirconium hydroxide, hydrated magnesium silicate, hydrated aluminum

silicate, basic magnesium carbonate, and hydrotalcite; and (3) zinc sulfide. The applied references would not have rendered obvious the claimed wiring harnesses comprising the recited crosslinked flame-retardant resin composition for at least the following reasons.

Sato is directed to a resin composition that comprises: (1) a polyethylene having a melt flow rate of about 5 g/10 min at the most and a density of at least 0.930, an olefin type polymer containing intra-molecular oxygen atoms, and another disclosed polymer; and (2) a metal hydroxide, such as magnesium hydroxide, aluminum hydroxide, or the like. See abstract and paragraphs [0024]-[0086] and [0107]. Sato is completely silent regarding a resin composition that comprises zinc sulfide.

It is clear from the teachings of Sato that the purpose of the metal hydroxide is to provide flame retardancy to the resin composition. See, e.g., paragraphs [0007]-[0024]. Sato exemplifies numerous resin compositions in which flame retardancy is provided solely by the incorporation of magnesium hydroxide. See Tables 1-24 and paragraph [0141] ("The results of Comparative Examples 17 and 18 show that, when the amount of magnesium hydroxide, a flame retardant (d), is too small, the flame retardant quality of the composition is poor."). Thus, Sato teaches that magnesium hydroxide alone is sufficient to provide flame retardancy to its resin composition. Id.

The experimental evidence set forth in the specification of the present application confirms that magnesium hydroxide is alone able to provide flame retardancy to a polyethylene-containing resin composition. Specifically, a comparison of Comparative Example 3 with the other Examples and Comparative Examples shows that using less than the recited amount of magnesium hydroxide fails to provide adequate flame retardancy to the resin composition, whereas using the recited amount (30-250 parts by weight) of magnesium hydroxide provides sufficient flame retardancy. See pages 33-36 (Tables 1-4) (showing that, out of all 42 Examples and Comparative Examples, only Comparative Example 3 failed to

provide adequate flame retardancy); see also page 28, line 18 to page 29, line 5 (describing the flame-retardancy test).

As previously discussed in Applicants' October 1, 2010 Request for Reconsideration, a comparison of Example 8 and Comparative Example 8 demonstrates that non-halogenous insulated wires that use the recited crosslinked flame-retardant resin composition comprising zinc sulfide are compatible with vinyl chloride insulated wires. Comparative Example 8 is different from Example 8 in that the crosslinked flame-retardant composition of Comparative Example 8 does not contain zinc sulfide, whereas the crosslinked flame-retardant composition of Example 8 contains zinc sulfide. A comparison between Example 8 and Comparative Example 8 demonstrates that, in the absence of zinc sulfide, compatibility is not achieved because Comparative Example 8 failed both test conditions A and B, whereas Example 8 passed both compatibility test conditions A and B. See specification at page 33, Table 1, and page 35, Table 3. The Office Action acknowledges that Sato and Lewin do not contain any teachings regarding incorporating zinc sulfide into a composition to provide such compatibility to a composition. See page 9.

Instead, the Office Action asserts that "Lewin discloses a polymeric flame retardant composition comprising sulfur compounds such as zinc sulfide which are added to the compositions in amounts of 1-3 wt % in order to obtain a pronounce[d] flame retardancy." See page 3. The Office Action further asserts that "Given that both Sato and Lewin are drawn to fire retardant polymeric compositions, in light of the particular advantages provided by the use and control of zinc sulfide and amounts thereof taught by Lewin, it would therefore have been obvious to one of ordinary skill in the art to include such compounds in the composition disclosed by Sato with a reasonable expectation of success." See page 4. Applicants respectfully disagree.

Lewin is directed to flame-retarding additives that provide flame retardation to polymeric compositions comprising fillers, such as glass fibers. See abstract. Lewin teaches that the flame-retarding additive comprises the combination of (1) at least one polyphosphate, (2) a sulfur-containing compound, (3) a catalyst, and (4) a nitrogen-containing compound. Id. The polyphosphate for use in the flame-retarding additive is mainly, if not entirely, ammonium polyphosphate (APP). See paragraph [0017]. Ammonium polyphosphate is primarily responsible for providing flame retardancy to the polymeric composition. See paragraphs [0004] and [0016]. Lewin teaches that zinc sulfide is a particularly important sulfur-containing compound for use in its flame-retarding additive. See paragraph [0011].

Lewin further teaches "It has been surprisingly been found, that a high degree of flame retardancy can be imparted to glass fiber-containing polymers by using APP without char-forming agents, but with relatively small amounts of metal-based catalysts and of sulfur compounds." See paragraph [0007]. In this context, Lewin further teaches that "It has been surprisingly been found that already small amounts of ZnS, in the range of 1-3 weight % of a polymer composition, yield a pronounced flame retardancy effect." See paragraph [0011]. Thus, Lewin teaches that the combination of ammonium polyphosphate and zinc sulfide (as compared to providing only ammonium polyphosphate) improves flame retardancy when provided to glass-fiber-containing polymers. Lewin does not teach that zinc sulfide alone provides flame retardancy.

Sato is not directed to a resin composition that comprises ammonium polyphosphate. Instead, Sato discloses that metal hydroxides, such as magnesium hydroxide, provide flame retardancy to its composition. None of the applied references teach that zinc sulfide improves flame retardancy when used in combination with a metal hydroxide. An ordinarily skilled artisan would not have had any reason or rationale to provide zinc sulfide in Sato's resin

composition in view of the teachings of Lewin because Sato's resin composition does not comprise ammonium polyphosphate, rendering the teachings of Lewin irrelevant.[1]

Moreover, the Office Action acknowledges that Sato does not disclose that zinc sulfide may be added to its resin composition. See page 3. The Office Action asserts that Sato generally "discloses the use of zinc compounds" and "Lewin discloses a polymeric flame retardant composition comprising sulfur compounds such as zinc sulfide." Id. It appears that the Office Action asserts that, because Sato discloses that zinc borate may be added to its resin composition, it would have been obvious to instead use zinc sulfide (as disclosed by Lewin) as a substitute for zinc borate in Sato's resin composition. Id; see also Sato at paragraph [0111].

The Office Action impermissibly relies on Applicants' disclosure in equating zinc borate and zinc sulfide because the applied references do not equate such compounds. It is clear from the Office Action's discussion of the applied references that zinc compounds and sulfur compounds are two different classes of compounds. Sato discloses zinc borate, which is clearly not a sulfur-containing compound as disclosed by Lewin.

Further, Lewin expressly classifies zinc sulfide and zinc borate as two different types of compounds. As discussed above, Lewin teaches that zinc sulfide is a particularly important sulfur-containing compound for use in its flame-retarding additive. See paragraph [0011]. On the other hand, Lewin teaches that catalysts for use in its flame-retarding additive are particularly metal-based catalysts and names zinc borate as a preferred metal-based catalyst. See paragraph [0018]. Because Lewin expressly classifies zinc sulfide and zinc borate as two different types of compounds and Sato only discloses zinc borate and not zinc

[1] Additionally, Lewin is directed to resin compositions that contain fillers, such as glass fibers. Sato is not directed to resin compositions that contain fillers, especially glass fibers. Accordingly, an ordinarily skilled artisan would not have applied the teachings of Lewin to the resin composition of Sato.

sulfide, it is Applicants' disclosure that the Office Action improperly relies upon to equate zinc borate and zinc sulfide.

Nakamura fails to cure such deficiencies of Sato and Lewin. Thus, the Office Action's assertion of obviousness is in error because it relies on impermissible hindsight reasoning and fails to establish obviousness using art-based teachings separate from Applicants' disclosure.

For at least these reasons, the applied references would not have rendered obvious claims 5 and 8. Reconsideration and withdrawal of the rejection are respectfully requested.

III. <u>Conclusion</u>

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the application are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

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Attachment:
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